410248 & 410256: Project Work Book

(Guidelines and Log)

Fourth Year Computer Engineering

Year 2021– 2022

Group/Project ID :

Team Members : 1. _____

2. _____

3. _____

4. _____

Project Title : _____

_____

Project Guide : _____

Area of the Project : _____

Sponsored/In house : _____

Name of the sponsoring organization: _____

_____

Name of the External Guide: _____

Phone Number:_____Email Id: _____

Sinhgad Institutes

Department of Computer Engineering
Sinhgad Technical Education Society's
SINHGAD COLLEGE OF ENGINEERING
Affiliated to Savitribai Phule Pune University, Pune

PROLOGUE

Project work is one of the most important components of the curriculum for the Engineering Graduate. From conceiving the idea to the materialization of it is a journey that has to be systematized, well defined and well documented to enjoy the full benefits of the efforts undertaken.

Every activity of the project development has its own importance and typical activities are like: Team formation, conceiving the idea, preparing the hypothesis, reporting the progress / development to the guide/ mentor, Interactions, suggestions and improvements, relevant documentations in proper format, schedule plans and visit logs.

Every institute is following their own best methods and techniques as per the guidelines and curriculum at the affiliated university. To bring the uniformity and standardization for the project work there is a need to come together and prepare the comprehensive guidelines regarding it.

This work book for the project work will serve the purpose and facilitate the job of students, guide and project coordinator. This document will reflect accountability, punctuality, technical writing ability and work flow of the work undertaken.

This document will definitely support the work undertaken.

Dr. Varsha H Patil
Coordinator, BoS Computer Engineering
SPPU, Pune

GENERAL INSTRUCTIONS

1. Students should enter the correct information in the work book.
2. Get all entries verified by respective project guide. No changes are to be made without project guide permission.
3. Students should report to their respective guides as per the schedule and its log is to be maintained in the work book.
4. Follow all deadlines and submit all documents strictly as per prescribed formats.
5. The work book should be produced at the time of all discussions, presentations and examinations.
6. The work book must be submitted to project coordinator/ guide/ department / College after successful examination at the end of year.
7. All documents and reports are to be prepared in Latex only (All the formats specifications provided adheres to MS Word but consequently applicable to final project report published using Latex)
8. Submit hard as well as soft copy. Maintain one copy with each member.

PROGRAM EDUCATIONAL OBJECTIVES

1. To prepare globally competent graduates having strong fundamentals, domain knowledge, updated with modern technology to provide the effective solutions for engineering problems.
2. To prepare the graduates to work as a committed professional with strong professional ethics and values, sense of responsibilities, understanding of legal, safety, health, societal, cultural and environmental issues.
3. To prepare committed and motivated graduates with research attitude, lifelong learning, investigative approach, and multidisciplinary thinking.
4. To prepare the graduates with strong managerial and communication skills to work effectively as individual as well as in teams.

PROGRAM OUTCOMES

Students are expected to know and be able –

1. To apply knowledge of mathematics, science, engineering fundamentals, problem solving skills, algorithmic analysis and mathematical modeling to the solution of complex engineering problems.
2. To analyze the problem by finding its domain and applying domain specific skills
3. To understand the design issues of the product/software and develop effective solutions with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. To find solutions of complex problems by conducting investigations applying suitable techniques.
5. To adapt the usage of modern tools and recent software.
6. To contribute towards the society by understanding the impact of Engineering on global aspect.
7. To understand environment issues and design a sustainable system.
8. To understand and follow professional ethics.
9. To function effectively as an individual and as member or leader in diverse teams and interdisciplinary settings.
10. To demonstrate effective communication at various levels.
11. To apply the knowledge of Computer Engineering for development of projects, and its finance and management.
12. To keep in touch with current technologies and inculcate the practice of lifelong learning.

TABLE OF CONTENTS

1. ABOUT PROJECT WORK

The word project comes from the Latin word projectum from the Latin verb proicere, "to throw something forwards" which in turn comes from pro-, which denotes something that precedes the action of the next part of the word in time (paralleling the Greek πρό) and iacere, "to throw". The word "project" thus actually originally meant "something that comes before anything else happens".

(Curtsey Ref- http://en.wikipedia.org/) The Project is conceiving the idea and implementing it systematically by using the knowledge derived in the course of education mainly to innovate or facilitate.

Work involves, study the feasibility of the project, planning project, studying existing systems, tools available to implement the project and state of art software testing procedures and technology with use of case tools.

The group of Under Graduate students at Final Year students will undertake project over the academic year. Work involves study the feasibility of the project, planning project, studying existing systems, tools available to implement the project and state of art software testing procedures and technology with use of case tools, design is to be implemented into a working model (software or hardware or both) with necessary software interface as an executable package.

a. Objectives and Outcomes:

Objectives -

- To Apply the knowledge for solving realistic problem To develop problem solving ability
- To Organize, sustain and report on a substantial piece of team work over a period of several months
- To Evaluate alternative approaches, and justify the use of selected tools and methods,
- To Reflect upon the experience gained and lessons learned, To Consider relevant social, ethical and legal issues,
- To find information for yourself from appropriate sources such as manuals, books, research journals and from other sources, and in turn increase analytical skills.
- To Work in TEAM and learn professionalism.

Outcomes -

- Students are expected to know and be able to-
- Solve real life problems by applying knowledge.
- Analyze alternative approaches, apply and use most appropriate one for feasible solution.
- Write precise reports and technical documents in a nutshell.
- Participate effectively in multi-disciplinary and heterogeneous teams exhibiting team work, Inter-personal relationships, conflict management and leadership quality.

b. Guidelines for Selection of Project Work:

Project is one of the significant contributory team works that has to be completed with distinct impression. It is really very difficult to explore the domain of interest / research/ thirst area/ society need. In Toto one cannot figuratively define best project but still there are certain parameters on which we can gauge the quality of project work done. It will be better suited to go for well-defined and relatively safe projects that provide scope for demonstrating proficiency with a low risk of failure especially at Under Graduate level.

General guidelines:

- Identifying domain, feasibility and usability of work.
- Project work is expected to involve a combination of sound background research (thorough study/ follow a line of investigation), and methodical implementation.
- Instead of fancied and driven behind the gaudy and ostentatious ideas, the utility has to be emphasized. It is also acceptable to identify the discrepancies/ flaws in the existing system and work accordingly to rectify or improve.
- It is irrational to select the IDE and the software/ tools before the idea is not yet finalized.
- Understanding the way project will be materialized and progressed.

c. Guidelines for Project Evaluation:

Project work is to be evaluated by both Internal and External examiners jointly, unanimously agreeing the following parameters among many others.

- Problem definition and scope of the project
- Through Literature Survey
- Appropriate Software Engineering approach
- Exhaustive and Rational Requirement Analysis
- Comprehensive Implementation- Design, platform, coding, documentation
- Optimization considerations(Memory, time, Resources, Costing)
- Thorough Testing of all modules and integration of modules
- Project Presentation and Demonstration(User Interface, ease of use, usability)
- Presentation of work in the form of Project Report(s)
- Understanding individual capacity, Role & involvement in the project
- Team Work (Distribution of work, intra-team communication and togetherness)
- Participation in various contests, Publications and IPR
- Documents / Manuals(Project Report, Quick reference, System, Installation guide)
- Outcomes / Usability / commercial value /product conversion of Work

(Refer Rubrics – page number 33)

2. UNIVERSITY SYLLABUS

Savitribai Phule Pune University

(Refer SPPU website for recent syllabus)

UNIVERSITY SYLLABUS

Semester-I

Teaching Scheme **Examination Scheme**

Tutorial: 2 Hrs/Week **Term Work Assessment: 50**

Course Objectives:

- To develop problem solving abilities using mathematics;
- To apply algorithmic strategies while solving problems;
- To develop time and space efficient algorithms;
- To develop software engineering documents and testing plans;
- To use algorithmic solutions using distributed, Embedded, concurrent and parallel environments.
- To encourage and expose students for participation in National/ International paper presentation activities.
- Exposure to Learning and knowledge access techniques using Conferences, Journal papers and participation in research activities.

Course Outcomes:

- To write problem solutions in projects using mathematical modeling, using FOSS programming tools and
- devices or commercial tools;
- To write SRS and other software engineering documents in the project report using mathematical models developed and NP-Hard analysis;
- To write test cases using multi-core, distributed, embedded, concurrent/Parallel environments;
- To write a conference paper;
- To practice presentation, communication and team-work skills.

Tools:

Preferably 64-bit FOSS tools but if sponsoring company's requirement is non-open source platform then it must be latest and current version of non-absolute tools. 64-bit i5/i7/ Desktops/Mobiles, Latest SAN, BBB or open source equivalent 3-tier architectures along with latest version of FOSS Operating systems like Fedora 21

or equivalent, LAMP tools, WEB server, Applications servers, Database servers, MongoDB or latest open source BigDATA tools, FOSS Programming Tools like gcc,g++,Eclipse, Python, Java and other tools are as per the requirement of the SRS. The documentation tools like Open office, GIT, Latex, Latex-Presentation.

Activity Planning for Tutorial Sessions:

- Selection of Project Option and Framing the Problem to solve as a Project for the group of 3 to 4 students.

  Option A: Industry Sponsored Project

  Option B: Project as a Entrepreneur

  Option C: Internal Project
- Internal guide allocation for the BE Project: Assistant Professor/Associate Professor/Professor as per AICTE norms in computer engineering having atleast 5 years of full time approved experience can guide the BE Project without compromising on the quality of the work(ref. Note1). The Project laboratory of 4 project groups (3 to 4 students in one group) constituting one laboratory tutorial batch (2 hrs per week), be allocated to the guide. The project group will submit the synopsis including title of the project, Technical Key Words (Ref. ACM Keywords) and relevant mathematics associated with the Project, names of at least two conferences, where papers can be published, Review of Conference/Journal papers (at least 10 papers + White papers or web references, (if any)) supporting the project idea, Plan of project execution using planner or alike project management tool.(Recommended dates: 3 weeks after Commencement of the Term). Preferably, the projects are Industry Sponsored or part of high level research/ Sponsored Research Project that are not conducted for any award of the educational degree or entrepreneurship project.
- The project conduct and procedures are amended as detailed below:- Problem statement feasibility assessment using, satisfiability analysis and NP-Hard, NP-Complete or P type using modern algebra and relevant mathematical models.(recommended date of submission:- 8 weeks before term end)
- Use of above to identify objects, morphism, overloading, functions and functional relations and any other dependencies. (recommended submission date:- 6 weeks before term end) Functional dependency graphs and relevant UML diagrams or other necessities.(recommended submission date:- 3 weeks before term end)

- Testing of problem statement using generated test data (using mathematical models, Function testing principles) selection and appropriate use of testing tools, testing of UML diagram's reliability. (recommended submission date:- two weeks before term end)
- The index of submission must cover above mentioned 5 heads in addition to the instructions by the guide. Students must submit a Latex Rep ort consisting of problem definition, literature survey, platform choice, SRS (System Requirement Specification) Document in specific format and high-level design document along with Annex A: Lab oratory assignments on Project Analysis of Algorithmic Design, Annex B: Laboratory assignments on Project Quality and Reliability Testing of Project Design at the end of term- I and Annex C: Project Planner and progress rep ort **after checking, removing/ avoiding the plagiarism. Give an additional assignment per reporting plagiarism to be submitted in the report under the Annex heading extra-work. If the project is the replica of any other previous project or work from other unrelated persons than the students team, such project should be rejected for the term work.**

  The term work at the end of Term-I shall b e assessed and evaluated for 50 marks by the panel of examiners in the subject (Internal (preferably guide) and external examiner from Computer Department of Engineering Colleges). At-least one technical paper must be submitted on the project design in the conferences/workshops in I ITs, Central Universities or UoP Conferences or equivalent International Conferences Sponsored by IEEE/ACM and review comments received as Annex D. The examiners must seek answers regarding the suggestions given in the review comments of the paper submitted.

Term-I Project Laboratory Assignments: Tutorial Session

1. To develop the problem under consideration and justify feasibility using concepts of knowledge canvas and IDEA Matrix.
2. Project problem statement feasibility assessment using NP-Hard, NP-Complete or Satisfiability issues using modern algebra and/or relevant mathematical models.
3. Use of divide and conquer strategies to exploit distributed/parallel/concurrent processing of the above to identify objects, morphisms, overloading in functions (if any), and functional relations and any other dependencies (as per requirements).

4. Use of above to draw functional dependency graphs and relevant Software modeling methods , techniques including UML diagrams or other necessities using appropriate tools.
5. Testing of project problem statement using generated test data (using mathematical models, GUI, Function testing principles, if any) selection and appropriate use of testing tools, testing of UML diagram's reliability.

For Entrepreneurship type project additional assignments: Tutorial Session

6. To sign the MoU/agreement with the Engineering College for the Industry-on-Campus. The college shall provide the company the enclosure with lock-and-key to accommodate required table space, stabilized electricity and the Internet access. The College may host such company for first two years and further by renewing the MoU/Agreement. The college shall provide all such documents necessary for the establishment of the company. The College shall provide all the facilities as per agreement for Rent FREE, without any charges or fees or returns whatsoever for the First Year or Academic Duration of the activity. The college m ay prepare joint prop os al with company for the AICTE/Government/University grants if any.
7. To study and establish a partnership company/proprietorship and get the PAN, MVAT, Profession Tax, Number and such other necessary legal permissions.
8. Try and prepare clients list and communication with the clients or advertise the pro duct by Developing the Company WEB Site.
9. To submit Pro duct Proposal for raising venture capital through government schemes of micro/small sector industries or through private venture capital entities.
10. To submit National/International patent/Copyright for first year to the Government Department of Patents and IPR.

Note 1. **The guide for an entrepreneurship project shall be a full time approved Professor or Associate Professor possessing qualifications as per AICTE norms.**

Note 2. **If the students fails to complete the entrepreneurship assignments successfully then The project shall be treated as Internal Project for the purpose of assessment.**

Note 3. **All projects are expected to exploit multi-core, embedded and distributed computing wherever possible.**

Savitribai Phule Pune University
(Refer SPPU website for recent syllabus)
UNIVERSITY SYLLABUS
Semester-II

Teaching Scheme
Tutorials: 6 Hrs/Week

Examination Scheme
Term Work Assessment: 100
Oral Assessment: 50

Course Objectives:

- To develop problem solving abilities using mathematics;
- To apply algorithmic strategies while solving problems;
- To develop time and space efficient algorithms;
- To develop software engineering documents and testing plans;
- To use algorithmic solutions using distributed, Embedded, concurrent and parallel environments.
- To encourage and expose students for participation in National/ International paper presentation activities.
- Exposure to Learning and knowledge access techniques using Conferences, Journal papers and participation in research activities.

Course Outcomes:

- To write review SRS, reliability testing reports, and other software engineering documents in the project report;
- To write problem solution using multi-core, distributed, embedded, concurrent/Parallel environments;
- To write the test cases to demonstrate the results of the project;
- To write conference paper;
- To write code using FOSS tools and technologies or propitiatory Tools as per requirements;
- To practice presentation, communication and team-work skills.

Tools:

Preferably 64-bit FOSS tools but if sponsoring company's requirement is non-open source platform then it must be latest and current version of non-absolute tools. Latest SAN,3-tier architectures along with latest version of FOSS Operating systems like Fedora 21 or equivalent, LAMP tools, WEB server, Applications servers, Database servers, MongoDB or latest open source

BigDATA tools, FOSS Programming Tools like gcc,g++,Eclipse, Python, Java and other tools are per requirement of the SRS. The documentation tools like Open office, GIT, Latex, Latex-Presentation.

1. Project workstation selection, installations and setup along with report to the guide. (recommended submission date:- 3 weeks after commencement of second term)
2. Programming of the project, GUI (if any) as per 1 st Term term-work submission.(recommended submission date:- Progress report every week during laboratory)
3. Test tool selection for various testing recommended by preferably external guide and generate various testing result charts, graphs etc. including reliability testing. (7 weeks before Term II Conclusion)
4. Review of design and necessary corrective actions taking into consideration feedback report of Term I assessment, and other competitions/conferences participated like IIT, Central Universities, University Conferences or equivalent centers of excellence etc.
5. Students must submit and preferably publish at least one technical paper in the conferences held by IITs, Central Universities or UoP Conference or International Conferences in Europe or US.
6. Final term work submissions in the prescribed format give n by the guides consisting of a project report consisting of a preliminary rep ort prepared in term-I, detailed design (all necessary UML diagrams) document, User Interface design, Lab oratory assignments on test cases and test results generated by selected project testing tool, conclusions, appendix (if necessary), glossary, tools used and references at the end of Term-I I after checking, removing/ avoiding the plagiarism. **Give an additional assignment per reporting plagiarism to be submitted in the report under the Annex heading extra-work. If the project is the replica of any other previous project or work from other unrelated persons than the students team, such project should be rejected for the term work.**

The Term I I examination is conducted by panel of examiners (preferably guide and expert from Industry having at least 5 years subject experience (or senior teacher in the subject in case of non-availability of industry expert). The project assessment shall be done using Live Project Demonstration [in existing functional condition], using necessary simulators (if required) and

presentation by the students. The remarks of Term I assessment and related corrective actions must be assessed during examining the term-work.

Term-II Project Laboratory Assignments:

1. Review of design and necessary corrective actions taking into consideration the feedback report of Term I assessment, and other competitions/conferences participated like IIT, Central Universities , University Conferences or equivalent centers of excellence etc.
2. Project workstation selection, installations along with setup and installation rep ort preparations.
3. Programming of the project functions, interfaces and GUI (if any) as per 1st Term termwork submission using corrective actions recommended in Term-I assessment of Term-work.
4. Test to ol selection and testing of various test cases for the project performed and generate various testing result charts, graphs etc. including reliability testing.

Additional assignments for the Entrepreneurship Project:

5. Installations and Reliability Testing Rep orts at the client end.
6. To study Clients Feedback rep orts and related fix generations.
7. To create Do cuments Profit and Loss accounts and balance-sheet of the company.

Note: If the students fails to complete the Entrepreneurship assignment successfully then the project shall be treated as Internal Project for the purpose of assessment.

3. UNDERTAKING BY STUDENTS

SINHGAD COLLEGE OF ENGINEERING, PUNE

UNDERTAKING BY STUDENT

We, the students of B.E. Computer hereby assure that we will follow all the rules and regulations related to project activity for the academic year 2020 -2021.The Project entitled-

_____

will be fully designed/ developed by us and every part of the project will be original work and will not be copied/ purchased from any source.

Name of the student	Signature
1._____	_____
2._____	_____
3._____	_____
4._____	_____

4. INSTRUCTIONS REGARDING PROJECT PROPOSAL AND FINALIZATION:

1. The project work may involve the designing a system/subsystem or upgrading / improving an existing system. The design is to be implemented into a working model (software or hardware or both) with necessary software interface as an executable package (installable package or hardware model) along with User & system manual and quick reference guide. A project report including all necessary documents.
2. Group may come up with sponsored project. Sponsorship may not be in terms of money or resources. It might be in terms of just suggesting problem definition and associated guidance. Students may collect the letter required for applying the Institute/Industries for the project sponsorship from project coordinator
3. List of suggested projects, prominent domains and respective expert , whom you may contact for guidance, with Project Coordinator. Students may contact respective staff along with synopsis for the guidance. Students may contact respective staff for projects suggested by them in the respective areas.
4. Meet Project Coordinator for project title registration.
5. Synopsis must include project title, group members, sponsor details (if any), detailed problem definition, area, abstract, details of existing similar systems if any, scope of the project and software-hardware requirements. Sponsorship details include name of sponsoring authority, address, name of guide, sponsorship terms & conditions and respective documents certifying the same from authorities.
6. A Panel of experts will approve the project group and title only after presentation as per schedule. Presentation will cover details mentioned in the synopsis as above.

5. SCHEDULE OF PROJECT WORK

SEMESTER-I

Sr. No.	Activity Scheduled Date	Date
1	Registration of Project groups	Mid of June
2	Submission of Project Synopsis	Last Week of June
3	Project presentations	First week of July
4	Finalization of projects & allotment of guide	Second week of July
5	Submission of final synopsis	Third week of July
6.	First presentation about progress of project work (Review I)	Last week of July
7	Second presentation about progress of project work (Review II)	Third week of August
8	Third Presentation (Review III)	Second week of Sept
9	Fourth presentation about progress of project work (Review IV)	Last week of Sept
10	Submission of partial project report	First Week of Oct
11	Project work Examination	As per SPPU Notification

SEMESTER-II

Sr. No.	Activity Scheduled Date	Date
1	Fifth presentation about progress of project work (Review V)	Mid of Jan
2	Sixth presentation about progress of project work (Review VI)	Second week of Feb
3	Review of Publication Activity	Last Week of Feb
4	Seventh presentation about progress of project	Second week of March
5	Submission of Draft of Report for checking	Third Week of March
6.	Submission of final project report and Project Work book to the project Coordinator	Last Week of March
7	Mock Project Examination	First Week of April
8	Project Examination	As per SPPU Notification

6.1 Project Review-I (Semester-I)

Problem Statement, Motivation, objectives and Literature Review: Students are expected to deliver presentation covering Problem Statement, Motivation, objectives and Literature Review.

Sr. No.	Questions	Date	Sign of Guide
1.	Does the statement gives clear identification about what project will accomplish?		
2.	Is the statement short and concise?		
3.	Can a person who is not familiar with the project understand scope of the project by reading the project problem statement?		
4.	The project's objectives of study (what product, process, resource etc.) are being addressed?		
5.	Is similar type of methodology / model used for existing work?		
6.	Is the studied literature sufficient to decide scope of the project?		
7.	Are the objectives set will help to achieve goal of the project?		
8.	Does Research gap identified will lead to find motivation of project?		
9.	Does your project contribute to our society by any means and will lead to find motivation?		
10.	Are the objectives clearly and unambiguously listed?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

6.2 Project Review-II (Semester-I)

Feasibility and Scope: Students are expected to deliver presentation covering Feasibility and Scope

Sr. No.	Questions	Date	Sign of Guide
1.	Is the project's view point is understood??		
2.	Is the project goal statement is in alignmentwith the Sponsoring organization's business goal and mission?		
3.	Who is the project's end user?		
4.	What is the projected cost of producing a product?		
5.	Is project achievable in specified (Time, Cost Budget)?		
6.	Are the requirements within the scope of the project?		
7.	Is the scope properly defined?		
8.	Does the problem statement clearly define scope of the project?		
9.	Do the project requirements fit into available hardware?		
10.	Whether the milestones are stated completely and project timeline is given?		
11.	Whether risks like technical risks, Operational risks, Schedule risks, business risks are identified correctly or not?		
12.	Whether Risk prioritization is done properly or not and any back up plan is there or not?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

6.3 Project Review-III (Semester-I)

Requirement Analysis: Students are expected to deliver presentation covering Requirement Analysis.

Sr. No.	Questions	Date	Sign of Guide
1.	Is information domain analysis complete, consistent and accurate?		
2.	Is problem statement categorized in identified area and targeted towards specific area there in?		
3.	Is external and internal interfacing properly defined?		
4.	Are requirement consistent with schedule, resources and budget?		
5.	Are all requirements traceable to system level?		
6.	What is needed to make the product?		
7.	Is there a demand for the produce?		
8.	Is identification of stakeholders is done properly?		
9.	Whether all requirements are captured and documented in line with scope?		
10.	Whether all type of analysis classes are identified or not?		
11.	Whether the Acceptance criteria is decided are not?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

6.4 Project Review-IV (Semester-I)

Design: Students are expected to deliver presentation covering Design.

Sr. No.	Questions	Date	Sign of Guide
1.	Are requirement reflected in the system architecture?		
2.	Does the design support both project (product) and project goals?		
3.	Does the design address all the issues form the requirement?		
4.	Is effective modularity achieved and modules are functionally independent?		
5.	Are structural diagrams (class, Object, etc) are well defined?		
6.	Are all class associations clearly defined and understood?(Is it cleat which classes provide which services)?		
7.	Are the classes in the class diagram clear? (What they represent in the architecture design document?)		
8.	Is inheritance appropriately used?		
9.	Are the multiplicities in the use case diagram depicted in the class diagram?		
10.	Are all objects used in sequence diagram?		
11.	Are the symbols used in all diagrams corresponding to UML standards?		
12.	Are behavioral diagrams (use case, sequence, activity, etc.) well defined and understood?		
13.	Does each case have clearly defined actors and input/ output?		
14.	Does the sequence diagram matches with class diagram?		
15.	Is aggregation/ containment (used) clearly defined and understood?		
16.	Whether State charts are capturing system's dynamic behavior correctly or not?		
17.	Related to procedural thinking whether DFDs and CFDs along with transaction and transformation flow are done correctly or not?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

7. INTERNAL EVALUATION SHEET (SEMESTER I)

Sr. No.	Name of Student	Problem Stmt./Motivation/Objectives/Scope/Feasibility Requirements (05)	Lit. Survey (05)	Requirement Analysis (05) Modelling & design (10)	Planning Prototype (05)	Presentation, Q & A (10)	Project Report (10)	Total (50)

Name and Signature of Evaluation Committee:

1. Prof. _____ _____
2. Prof. _____ _____
3. Prof. _____ _____

Comments by External Examiner:

_____

_____

Name & Signature of External Examiner **Name & Signature of Guide** **Signature of HoD**

8.1 Project Review-I (Semester-II)

Modeling (Model Refinement and Algorithm development) : Student is expected to deliver presentation covering Modeling

Sr. No.	Questions	Date	Sign of Guide
1.	Which software Development Process model is used? (Water fall, Incremental, RAD) How? (at this level?)		
2.	Do you clearly identify data objects, their attributes and relationships? (All constraints from SRS are captured or not?)		
3.	Have you clearly matched the objects with respective classes and their responsibilities?		
4.	Have you analyzed the requirements and represented them into respective models?		
5.	Can you differentiate between different system states and depict them in the form of state transition diagram?		
6.	Does the mathematical model clearly imply design of the project?		
7.	Does the mathematical model clearly states goal of project?		
8.	Does the interface between the modules properly identified?		
9.	Does any functional dependencies are identified and described?		
10.	Which architectural model does your system supports?		
11.	Whether Deployment diagram is in line with selected architecture?		
12.	Whether all components are designed properly and represented in component diagram?		
13.	Whether NP-completeness of algorithms is checked or not?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

8.2 Project Review-II (Semester-II)

Coding / Implementation: Student is expected to deliver presentation covering Coding / Implementation.

Sr. No.	Questions	Date	Sign of Guide
1.	Does the code completely and correctly implement the design?		
2.	Does the code comply with the coding standard?		
3.	Is the code well structured, consistent in style, and consistently formatted?		
4.	Are all functions in the design coded?		
5.	Does the code make use of object oriented concepts?		
6.	Does the code support granularity?		
7.	Does the language used for coding is correctly chosen as per the project need?		
8.	If any off the shelf components are used, Have you understood the functionalities of using it?		
9.	Are all comments consistent with the code?		
10.	Whether code optimization is done properly or not?(By using language features)		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

8.3 Project Review-III (Semester-II)

Validation and Testing: Student is expected to deliver presentation covering Validation and Testing

Sr. No.	Questions	Date	Sign of Guide
1.	Have you done alpha testing?		
2.	Have you done beta testing?		
3.	Have you validated the requirements, design and code as per standard?		
4.	Have you performed GUI testing of project? How?		
5.	Does your system comply with basic usability norms?		
6.	Have you tested the code using standard datasets available in your area of project?		
7.	Have you tested the code in real time environment?		
8.	After integration of all components whether total performance of system is checked or not?		
9.	Whether repository of all components along with versions is documented or not?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

8.4 Project Review-IV (Semester-II)

Report Writing: Student is expected to deliver presentation covering Report Writing

Sr. No.	Questions	Date	Sign of Guide
1.	Is the report written as per the prescribed format?		
2.	Is the report timely prepared?		
3.	Is the report properly organized, spelled, grammatically correct?		
4.	Is the report plagiarism free?		
5.	Is the report precise and written to the point?		
6.	Is the report contains complete results and comparative graphs?		
7.	Are all figures and tables properly numbered and labeled?		
8.	Are all figures and tables properly cited?		
9.	Whether references are properly cited?		

Comments given by review committee members:

Sr.No.	Comments By Review committee members :	Signature Review committee Members
1		
2		
3		

9. INTERNAL EVALUATION SHEET (SEMESTER II)

Sr. No.	Name of Student	Modeling (10)	Coding & Implementation (40)	Testing (10)	Understanding, Individual Involvement, Contribution in Project (10)	Team Work (10)	Demonstration & Presentation (10)	Documents & Report (10)	Total (100)

Name and Signature of Evaluation Committee:

1. Prof. _____ _____
2. Prof. _____ _____
3. Prof. _____ _____

Comments by External Examiner:

_____

_____

Name & Signature of External Examiner **Name & Signature of Guide** **Signature of HoD**

10. SOFTWARE ENGINEERING CODE OF ETHICS AND PROFESSIONAL PRACTICES

(Courtesy / Reference- http://www.acm.org/about/code-of-ethics)

Computers have a central and growing role in commerce, industry, government, medicine, education, entertainment and society at large. Software engineers are those who contribute by direct participation or by teaching, to the analysis, specification, design, development, certification, maintenance and testing of software systems. Because of their roles in developing software systems, software engineers have significant opportunities to do good or cause harm, to enable others to do good or cause harm, or to influence others to do good or cause harm. To ensure, as much as possible, that their efforts will be used for good, software engineers must commit themselves to making software engineering a beneficial and respected profession. In accordance with that commitment, software engineers shall adhere to the following Code of Ethics and Professional Practice.

The Code contains eight Principles related to the behavior of and decisions made by professional software engineers, including practitioners, educators, managers, supervisors and policy makers, as well as trainees and students of the profession. The Principles identify the ethically responsible relationships in which individuals, groups, and organizations participate and the primary obligations within these relationships. The Clauses of each Principle are illustrations of some of the obligations included in these relationships. These obligations are founded in the software engineer's humanity, in special care owed to people affected by the work of software engineers, and the unique elements of the practice of software engineering. The Code prescribes these as obligations of anyone claiming to be or aspiring to be a software engineer.

Software engineers shall commit themselves to making the analysis, specification, design, development, testing and maintenance of software a beneficial and respected profession. In accordance with their commitment to the health, safety and welfare of the public, software engineers shall adhere to the following Eight Principles:

1. PUBLIC - Software engineers shall act consistently with the public interest.
2. CLIENT AND EMPLOYER - Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest.

3. PRODUCT - Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.
4. JUDGMENT - Software engineers shall maintain integrity and independence in their professional judgment.
5. MANAGEMENT - Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance.
6. PROFESSION - Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.
7. COLLEAGUES - Software engineers shall be fair to and supportive of their colleagues.
8. SELF - Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

Environment and Computing:

Information and communication technologies (ICTs) have been contributing to environmental problems: computers, electronic devices and ICT infrastructure consume significant amounts of lectricity, placing a heavy burden on our electric grids and contributing to greenhouse gas emissions. In 2007, the total footprint of the ICT sector – including personal computers (PCs) and peripherals, telecoms networks and devices and data centers – was 830 Mt CO2 emission, about 2% of the estimated total emissions from human activity released that year (a figure equivalent to aviation). ICT hardware poses severe environmental problems both during its production and its disposal. Each stage of a computer's life, from its production, throughout its use, and into its disposal, presents environmental problems. Manufacturing computers and their various electronic and non electronic components consumes electricity, raw materials, chemicals, and water , and generates hazardous waste. All these directly or indirectly increase carbon dioxide emissions and impact the environment and the trend is to increase in the BAU (Business As Usual) scenario.

Green Computing:

Hence you all our students are requested to follow green computing practices. Green computing is the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems — such as monitors, printers, storage devices, and networking and communications systems —efficiently and effectively with minimal or no impact on the environment. Green computing includes the dimensions of environmental sustainability, the

economics of energy efficiency, and the total cost of ownership, which includes the cost of disposal and recycling. Green computing benefits the environment by improving energy efficiency, lowering greenhouse gas emissions, using less harmful materials, and encouraging reuse and recycling . Green design, Green manufacturing, Green use, Green disposal are complementary paths of green ICT. Only focusing on these four fronts we can achieve total environmental sustainability from the IT side and make IT greener throughout its entire lifecycle.

Social Life and Computing:

Each IT professional must keep in mind the three key components of a corporate Green IT best practices policy -Environment, Economy and Social aspect. The invention of the computer has completely changed the way we live our lives. Nearly everything is controlled by a computer; cars, satellites, phones, etc. Computers have made our lives easier. Computers can also have positive effects on a person's social life when their power to connect over great distances is harnessed fully. Computers have both positive and negative impact in our society. While technology is a wonderful thing it is almost likely that it can be used in an immoral or wrong way. There is a price to pay for everything even if it appears it's making life easier on people.

While proper lifecycle management can greatly boost a IT company's ecological and environmental sustainability position, it can also contribute to achieving goals on the social front. Hardware retirement practices are the primary concern in this regard. In addition to seeking carbon neutrality, a proper asset retirement strategy should seek sustainability in the communities where companies operate.

The following social objectives should be considered:

1. To optimize sustainability in their IT infrastructure, companies should focus on each state of the IT lifecycle
2. Setting the Appropriate Corporate Sustainability Policy
3. Avoiding unethical labor practices and Controlling unethical exports
4. Accountability in the Recycling e-waste and Sustainability Metrics and Reporting
5. Greater Transparency Regarding Material Analysis and Extraction
6. Compliance with stringent, evolving security regulations

11. CONTEST PARTICIPATION DETAILS

A. Participation in project Competition / Contest:

Sr. No.	Name and Place of Project Competition and Exhibition	Date	Certificates/ Prizes won if any
1.			
2.			
3.			
4.			

Attach attested copy of certificate(s)

B. Paper Publication / Presentation/ IPR :

Sr. No.	Name of Organizer	Date	Certificates / Prizes won if any
1.			
2.			
3.			
4.			

12. RUBRICS

A. IDEA Conception

Grade (Grade Point) / Parameter	Excellent (10-9)	Very Good (6-8)	Fair (3-5)	Poor (1-2)
Problem Definition and Scope of the Project				
Literature Survey				
Software Engineering Approach				
Requirement Analysis				

B. Implementation

Grade (Grade Point) / Parameter	Excellent (10-9)	Very Good (6-8)	Fair (3-5)	Poor (1-2)
Implementation- Design, platform, coding,				
Optimization considerations (Memory, time, Resources, Costing)				
Thorough Testing of all modules				
Integration of modules and project as whole				

C. Documents

Grade (Grade Point) / Parameter	Excellent (10-9)	Very Good (6-8)	Fair (3-5)	Poor (1-2)
Synopsis				
Project Report				
Quick references				
System manual				
Installation Guide				
Work Book				

D. Demonstration

Grade (Grade Point) / Parameter	Excellent (10-9)	Very Good (6-8)	Fair (3-5)	Poor (1-2)
Project Presentation and Demonstration(User Interface, ease of use, usability)				
Understanding individual capacity & involvement in the Project				
Team Work (Distribution of work, intra-team communication and togetherness)				
Outcomes / Usability				

A. Contest Participation / Awards, Publications and IPR

Grade (Grade Point) / Parameter	Excellent (10-9)	Very Good (6-8)	Fair (3-5)	Poor (1-2)
Participation in various contests				
Appreciation and Awards				
Publications				
Copyright				
Patent				
Commercial value /product conversion of Work				

BIBLIOGRAPHY

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